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**TITLE:** Quartz type optical waveguide component for optical fiber communication system, includes optical waveguide layer whose Young's modulus is larger than Young's modulus of interface layer formed on board

**PATENT-ASSIGNEE:** MITSUBISHI ELECTRIC CORP [MITQ]

**PRIORITY-DATA:** 2002JP-0049854 (February 26, 2002)

**PATENT-FAMILY:**

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**APPLICATION-DATA:**

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
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**INT-CL (IPC):** G02B006/12, G02B006/122

**ABSTRACTED-PUB-NO:** JP2003248130A

**BASIC-ABSTRACT:**

NOVELTY - An optical waveguide layer (7) includes lower and upper clad layers (2,4) made of quartz, which is laminated on an interface layer (12) formed on a board (1). The Young's modulus of interface layer is smaller than the Young's modulus of optical waveguide layer and board.

USE - For optical fiber communication system.

ADVANTAGE - By making the interface layer Young's modulus smaller than that of optical waveguide layer due to thermal expansion coefficient difference of optical waveguide layer and board is suppressed.

DESCRIPTION OF DRAWING(S) - The figure shows a sectional view of the quartz type optical waveguide component.

board 1

lower clad layer 2

upper clad layer 4

optical waveguide layer 7

quartz-type optical waveguide component 10

interface layer 12

CHOSEN- Dwg.1/10

DRAWING:

TITLE- QUARTZ TYPE OPTICAL WAVEGUIDE COMPONENT OPTICAL COMMUNICATE  
TERMS: SYSTEM OPTICAL WAVEGUIDE LAYER YOUNG MODULUS LARGER YOUNG  
MODULUS INTERFACE LAYER FORMING BOARD

DERWENT-CLASS: P81 V07

EPI-CODES: V07-F01A1; V07-F01B1;

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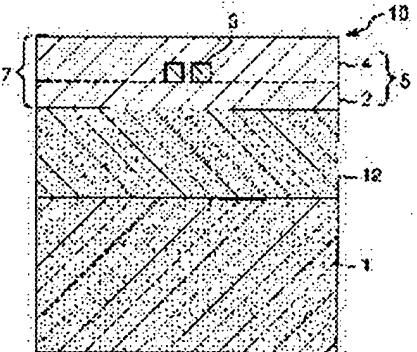
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## (54) QUARTZ-BASED OPTICAL WAVEGUIDE COMPONENT

## (57) Abstract:

PROBLEM TO BE SOLVED: To provide quartz-based optical waveguide components for reducing polarization dependence used for a light communication system.

SOLUTION: A quartz-based optical waveguide component 10 comprises a substrate 1, an intermediate layer 12 formed on the substrate, and a quartz-based optical waveguide layer 7 comprising a core 3 formed by a quartz-based material on the intermediate layer, and a cladding layer 5 formed by a quartz-based material for accommodating the core. The Young's modulus in the intermediate layer is smaller than that of the quartz-based optical waveguide layer and the substrate. Additionally, in the intermediate layer, a porous layer with silicon or silicon oxide as a main constituent is preferable.



## LEGAL STATUS

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